

University of Dundee

Video Interaction Guidance in Collaborative Group Work

Musset, Matthew; Topping, Keith

Published in:
Educational Psychology

DOI:
[10.1080/01443410.2017.1342768](https://doi.org/10.1080/01443410.2017.1342768)

Publication date:
2017

Document Version
Peer reviewed version

[Link to publication in Discovery Research Portal](#)

Citation for published version (APA):

Musset, M., & Topping, K. (2017). Video Interaction Guidance in Collaborative Group Work: Impact on Primary School Pupils' Self-Esteem and Behaviours. *Educational Psychology*, 37(9), 1067-1081.
<https://doi.org/10.1080/01443410.2017.1342768>

General rights

Copyright and moral rights for the publications made accessible in Discovery Research Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from Discovery Research Portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 1

Video Interaction Guidance in Collaborative Group Work:

Impact on Primary School Pupils' Self-Esteem and Behaviours ~~& Skills~~

Matthew Musset

Area Principal Educational Psychologist, Highland Council Educational Psychology Service.

Tel. 01397 707350

Corresponding author email: matthew.musset@highland.gov.uk

Research carried out in association with Aberdeen City Council and with the School of Educational & Social Work, University of Dundee, Dundee DD1 4HN, Scotland.

Keith Topping

Professor of Educational & Social Research, University of Dundee, Dundee DD1 4HN, Scotland.

Tel. 01382 381417

Email: k.j.topping@dundee.ac.uk

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 2

Video Interaction Guidance in Collaborative Group Work:

Impact on Primary School Pupils' Self-Esteem and Behaviours ~~& Skills~~

Abstract

Video interaction guidance (VIG) is an increasingly evidence-based intervention. This study used VIG to enhance pupil responses during a group work programme. Fifteen primary-aged classes across a range of socio-economic status received regular group work over a year. A mixed methods repeated measures design involved nine experimental classes receiving intervention of three cycles of VIG. Six control classes did not receive the VIG intervention. Pre-to-post-test measures included: pupils' self-esteem in relation to learning, using the Myself as a Learner Scale; a peer assessment schedule based upon Frederickson's Social Inclusion Survey; and a researcher devised pupil questionnaire. Pupils' communicative behaviours were analysed for a random sample of twelve video clips. Results showed that reinforcement of desirable group work behaviours using VIG enhanced pupils' self-esteem. The VIG intervention significantly enhanced the experimental group. There was greatest impact on increasing the self-esteem of younger children. Experimental pupils' retrospective ratings of group work significantly increased, again youngest pupils showed greatest improvement. Film observations showed a trend towards an increase in pupils' open questions replacing closed questions. There was a significant increase in peer assessment of communicative behaviours across the whole sample, irrespective of the VIG intervention. Implications for practice and future research are discussed.

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 3

Keywords: video interaction guidance; group work; communication skills; self-esteem.

Introduction

Collaborative enquiry is central to teaching and learning practice in the UK. This project explored problem based group learning in primary classes to gauge the impact of using the VIG method. Whilst VIG is an increasingly evidence based intervention, there was a gap in showing the benefits of its use with whole classes of pupils.

Aims

The project aimed to show that positive reinforcement of desirable group work behaviours viewed on film, actively elicited through whole class discussion, would:

1. Lead to improved pupil communication skills
2. Enhance pupils' self-esteem.

Literature Review

Collaborative Learning and Group Work

Extensive studies have established that collaborative group work can positively influence communication in the classroom – intervention studies across the world by Gillies et al. (2008), Webb (1989, 2009) and others have shown this. Group work practice in schools has received constructive criticism over recent years. Baines et al. (2008) highlighted that its potential as a pedagogical approach was not being fully realised. Kutnick et al. (2008) pointed out that whilst pupils were seated in groups research indicated that pupils did not actually collaborate or learn. Kutnick et al. (2010) highlighted the importance of clear guidelines to make sure group work was collaborative. Baines et al. advised small group size, of three or four pupils, with

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 4

suitable seating arrangements, to promote genuine involvement of all group members. Mercer (2005, 2008, 2010) carried out substantial research into developing discussion skills through collaborative group work processes. Mercer used a mixed methodologies approach of quantitative and qualitative data gathering and analysis. Fidelity checks took place during the intervention period to ensure teachers provided regular consistent group work experiences for pupils. Pupils needed to be taught how to present reasoned views in group discussion, with set ground rules for this. Where group members agreed to work towards common solutions, pupil learning outcomes showed significant improvement. Mercer therefore provided useful pointers, a structure for how to promote good quality discussion in collaborative group work.

Dewey and Bento (2009) and McGuinness (2005, 2006) highlighted the growing interest in teaching thinking skills through group work in schools. They examined the effectiveness of an infusion methodology, Activating Children's Thinking (ACTS). Cognitive gains resulted, however social emotional development showed a decline over time, reflecting pupils' increased negative perceptions of themselves as learners, as measured by Burden's (2000) *Myself as a Learner Scale (MALS)*. The ACTS intervention had possibly increased pupils' self-awareness as they matured and became more self-critical. The meaningful measurement of self-esteem represented a challenge to this study. The higher level of conscious conflict encouraged by dialogue in collaborative group work situations might initially lead to lower levels of self-esteem, as was discovered by Dewey and Bento. Social emotional aspects of learning are however arguably just as important as the cognitive development aspects, so a holistically useful group VIG intervention should aim to benefit both areas, to be justified. Developing communication skills is a key aspect of successful collaborative group work. VIG would be a useful tool for assisting pupils to objectify and improve their own

behaviours. This study therefore set out to demonstrate the worth of using VIG with primary aged pupils.

Video Interaction Guidance – Theoretical Background

VIG has its origins in family work, with parents and children, developed in the Netherlands by Biemans in the 1980s (see Simpson, 2001). The theoretical underpinnings of VIG originate from that of mediated learning (Vygotsky, 1978), from the work surrounding mother-infant inter-subjectivity (Trevarthen, 1979; Trevarthen and Hubley, 1978) and from theories of change which emphasise empowerment and collaboration (Simpson, Forsyth and Kennedy, 1993-94). The concept of self-modelling is central to VIG, harnessing the potential of people learning from viewing film footage of their own behaviours (Dowrick, 1999; Bandura, 1986). It has well established and growing international interest. Practitioners in psychology, education and social care use the method with clients of all ages, in a wide range of contexts. Positive outcomes from VIG have been shown in terms of improvements to communication and interactional style, leading to positive shifts in relationships (Fukkink and Tavecchio, 2010; Kennedy et al., 2011). VIG has been recognised by The National Institute for Health and Care Excellence (NICE, 2012) as a credible, evidence-based intervention. There is however limited quantitative research evidence that VIG works, particularly in the school situation, and no VIG research with whole classes of children – so a clear gap existed in the current research field.

The Growing Evidence Base for the Impact of VIG in School Settings

Forsyth, Kennedy and Simpson (1996) highlighted the importance of enhancing positive interaction in schools, recognising the amount of time children spend in that setting. VIG has been shown to increase teachers' awareness of how to improve communication skills in the classroom (Forsyth et al., 1996; Kaye, Forsyth and

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 6

Simpson, 2000). In addition to changes in teacher/pupil interaction, Gavine and Simpson (2006) revealed a shift from convergent to divergent patterns of thinking and discourse between teachers and pupils, from using closed to open questions, as a result of VIG intervention.

Fukkink and Tavecchio (2010) carried out a VIG intervention with 95 early childhood teachers across two childcare providers. This was a rare attempt at using a robust experimental design in VIG research and gave mixed results. There were positive findings - following training, teachers were found to make more frequent eye contact, received the initiatives of children more often, and allowed children to take turns more frequently. Inconclusive results were found for other VIG measures – turning towards child, following child, non-verbal reception, and acknowledging self. Most VIG research in schools has focused on the behaviour of teaching and assistant staff supporting individuals and small groups of pupils (Hayes, Richardson, Hindle and Grayson, 2011; Forsythe, 2010; Lennon and Philp, 2003). Positive impacts have been reported, of VIG on staff skills and confidence. Participants regularly identified their enhanced awareness of interpersonal skills. Hayes et al. acknowledged limited generalizability to other contexts. Hayes et al. noted that the evidence base for use of VIG in targeting specific behaviours in pupil interaction was relatively weak compared to VIG work with adults. The use of VIG with whole classes has been neglected (Hayes et al., 2011), as has pupil involvement in feedback review (Landor, Laughlan, Carrigan and Kennedy, 2007). Topping, Samuels and Paul (2008) highlighted the importance of information feedback in teaching and learning. Others have shown that feedback has more impact when repeated (Lhyle and Kulhavy, 1987) and immediate (Samuels and Wu, 2003). The opportunity for feedback being immediate and repeated is highest

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 7

within a dialogue-based activity, such as a video feedback session which elicits discussion.

VIG in schools has tended to focus upon children with additional support needs (Gavine and Forsyth, in Kennedy et al., 2011). There may be a specific focus, such as autism (Kennedy and Sked, 2008) or more general group relationship difficulties (Walmsley, 2011). The potential for VIG having a positive impact is no less with whole classes than with targeted individuals. VIG has potential for influencing peer group social behaviours and for reinforcing and developing good learning habits (e.g. in team working). Mohammed and Musset (2007) carried out an intervention with a mid-primary class, which included VIG as part of a Circles of Friends approach (Barrett and Randall, 2004). Three cycles of film and feedback with the class yielded positive results. The teacher had identified a merged, fragmented class with a need to build friendships and team working skills. As a result of the intervention the teacher reported pupils' improved listening and negotiation skills, with enhanced problem solving and conflict resolution skills.

Aims of Study

The project therefore had dual aims, to show that the VIG intervention would lead to improved pupil communication skills in group work, as well as enhance pupils' self-esteem and confidence in relation to collaborative group learning.

Method

Overview

An experimental mixed methods repeated measures design involved nine experimental classes receiving intervention of three cycles of video interaction guidance, as part of their regular collaborative group work. In addition, six comparison

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 8

classes from the same schools did not receive the video intervention, but did engage in regular collaborative group work.

Sample

Four volunteer schools participated in this study and covered a range of socio-economic status (SES), from low/medium to high, as checked with authority data (drawn from the Census Distribution of Pupils by Scottish Index of Multiple Deprivation, 2012). This confirmed that two school populations reflected high SES, one school medium SES, and one school a low to high range of SES. The experimental sample of nine classes comprised two classes from each of three primary schools and three classes from one school. Each school was asked to select a mid and late primary class. The total number of experimental pupils was 241. Early on in the school year a control, or comparison group (who wouldn't be filmed) was also identified, with a total of 147 pupils from six classes across the same four schools, of similar age range and SES. Volunteer teachers were identified in both cases by requests through head teachers. The informed consent of all parents/carers was secured, with a number of experimental pupil opt outs respected - a small group in each of two experimental classes participated in activities, but were not filmed.

Measures

Myself as a Learner Scale (MALS). Burden's (2000) Myself as a Learner Scale (MALS) was used to measure pupils' self-esteem in relation to learning, and specifically in relation to problem solving. MALS was considered to be relatively straightforward for teachers to administer to their classes in this study, and for pupils to complete at the start and end of the school year, around the same time as filming took place. Pre- and post-intervention measurements took place around September/October and May/June, respectively. MALS involved pupils rating themselves from 1 to 5 (1 =

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 9

definitely true, to 5 = definitely not true about me) against 20 statements which related to learning. It tapped specifically into their self-perceptions as learners and problem solvers. The scale included questions specifically about learner confidence in relation to problem solving, which reflected the primary focus of the investigation, suggesting it had good face validity to use in this study. MALS was standardised by Burden (1998, 2000) with a sample of 389 pupils. MALS has been shown to have high internal consistency, as a unified measure of self-concept. The manual showed high reliability on test/re-test with two age ranges, 12:0-12:10 (correlation 0.96) and 9:11-10:09 (correlation 0.70).

Peer assessment schedule. A 5-point scale (ranging from 'working towards' to 'excellent') was adapted from Frederickson's (1999) Social Inclusion Survey. This schedule allowed pupil raters the opportunity to make discerning judgments about their peers, whilst emphasising the positive. The schedule required pupils to rate their peers in relation to behavioural targets, how well they were 'looking and listening' and 'giving and taking turns'. The rated behaviours reflected aspects of the VIG Contact Principles of Good Communication. This ensured that clear reinforcement and cross referencing of target behaviours was built in.

The schedule included explicit instructions for teachers, for administration to experimental and control classes, around the same times as MALS. Teachers were instructed to give schedules out to the class during a group work activity, asking groups to pause in turn, look around the class and rate all of their classmates in relation to the targets.

Reliability analysis was carried out with the peer assessment schedule to check its reliability of repeated use in a test-retest situation. Cronbach's Alpha yielded was 0.76, near to 0.8, therefore adequate reliability of the tool was assumed.

Experimental pupil questionnaire. Pupils rated how well they thought their group had worked together at the start and end of the year. A 5-point scale ('working towards' to 'excellent') was used. 'Working towards' was again used as a positively orientated language concept that schools suggested their pupils were already experiencing in their other self-evaluation activities. Pupils were also asked if they thought the video had helped their group work. It is acknowledged that these retrospective ratings might be construed as rather leading; however it is felt that pupils would have been able to make informed judgements about changes to their group work over time.

Video filming of lessons. A lesson observation schedule was devised and refined through inter-coder reliability checks. Through this process the schedule defined and counted five verbal behaviours, which were judged simple enough to broadly capture most of the transcribed dialogue likely to occur in any problem solving discussion:

- Expresses own idea/offers opinion/gives information
- Suggests/develops a line of enquiry/builds upon an idea/proposes strategy
- Asks closed question
- Asks open question
- Summarising/agreeing.

The schedule also counted four non-verbal behaviours, derived from the VIG

Contact Principles of Good Communication:

- Smiling
- Eye contact
- Turns taken (separate utterances)

- Turns head towards.

The inter-coder reliability check was carried out in two stages. Two sample clips were coded by the researcher and a colleague, generating rules for coding. Using these rules, a further sample of four clips was coded by the researcher and another colleague. Inter-coder agreement rating of 81% was resulted, judged as reliable enough for the researcher to proceed with coding the data alone.

Teachers' views. Teachers' views on the process were gathered informally, at interim and end points. Comments were obtained from five out of nine experimental teachers across all four schools, from head teachers in two schools, and a deputy head teacher in another school. Three guiding questions were used: how group work sessions were going, how film and feedback sessions were impacting, and about the use of the schedules and questionnaires?

The Nature of the Intervention and Procedure

Preparation and training of teachers. All teacher participants committed to providing regular group discussion-based problem-solving activities over a school year. Planning meetings took place with experimental then control class teachers, school by school, early on in the school year. Expectations about group work were discussed and guidelines provided. Expectations/guidelines included suggestions around seating arrangements, and optimal group size (3-4 pupils) to best promote the active engagement of all. These rules, or parameters, were established to promote a degree of consistency in the collaborative nature of group discussions and shared recording methods. All teachers were also asked that any records or products of group work (written, drawn, 3-dimensional model, or other medium) were done jointly. This helped emphasise and ensure shared outcomes for the groups, which research on successful group work has shown as key (Kutnick et al, 2010).

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 12

Experimental teachers were also provided with the VIG Contact Principles of Good Communication and some prescribed rules for filming in classes. Seating of children was suggested around the ends of single tables, to ensure the successful capturing of interactive behaviours and dialogue, on camera. Experimental and control teachers received the same input from the researcher by way of information, expectations and planning for group activities in advance. Classes were therefore matched by age, stage and SES, also by consistent expectations of regular group work. The only difference was that the experimental group received VIG.

Video filming of lessons. Experimental classes were filmed at three points over the year – during September/October, January/February and May/June. Teachers delivered a pre-planned activity for their class. Filming commenced for each lesson following the teacher's instructions to their class, as pupils started to discuss as groups. Film was taken by a handheld roving camera, with built-in microphone and wide angle lens to ensure whole groups and their dialogue was captured within the film frame and on audio, respectively. It is acknowledged that pupils' dialogue in busy classrooms would be difficult to capture, given the acoustics, however the method described allowed the camera to get up close to participants and thereby reduce the level of background noise. Just prior to filming, the pupils' attention was drawn to the camera recording what it 'sees' and 'hears', and that pupils should try to behave as if it was not there, and not look towards the camera. The camera was taken around all participating groups within each class, filming for about 1-3 minutes in each case, capturing each group two or three times during a lesson. The length of clip naturally varied due to the nature of the task/discussion, also due to the varying levels of pupil engagement. It is conceivable that particularly successful groups were more likely to contribute more

footage. This aimed to be inclusive of all children when also later feeding back positive clips to classes.

The filmed lessons included a wide variety of activities over the school year, seen in Table 1:

INSERT TABLE 1 ABOUT HERE

Following lessons, 30-50 minutes of video was edited into positive clips of group work, varying in length from 10 seconds to 2-3 minutes long. A sequence of selected stills and moving clips was created for each lesson filmed.

Feedback review sessions. Experimental classes had three feedback review sessions over the school year. In general the time lapse between filming and feedback was one to two weeks, to ensure that the filmed activity remained relatively fresh in pupils' memories. Feedback review sessions lasted approximately 30-60 minutes, all led by the researcher, with contributions invited from teachers sitting in. Edited films were shared with classes in the form of short sequences of clips separated by titles. These titles included general statements (e.g. good discussion, working well as a team, taking turns) and/or pupil quotes taken directly from the clips, used as memory prompts to engage pupils. Films were projected onto large interactive whiteboards with speakers attached. Films were paused between clips and pupils were asked open questions such as, 'What can we see in terms of good communication?' Pupils' attention was drawn to specific observable behaviours such as body language/gesture and language/words used, eliciting their views about these.

The sessions aimed to be as interactive, engaging and activating as possible, and to draw views and comments from as many children as possible. As a general VIG practice principle, when showing clips, children captured within the frames were given the first opportunity to comment before opening up the discussion to others. To help

avoid pupils habituating to the VIG process over the three cycles of film and feedback, a degree of specific novelty was introduced into each occasion, focusing in turn on: eye contact; good listening; giving and taking turns. Pupils were also asked to look for evidence of any good communication and teamwork in their groups.

Over the intervention period, the Contact Principles of Good Communication posters remained present on classroom walls for all to refer to. Teachers were given copies of the film clip sequences immediately following feedback reviews and invited to show classes the films again at a near future date, to reinforce the intervention.

Procedure for video clip analysis. Pupils' dialogue was transcribed for analysis. One class from each of the four schools was randomly selected by drawing lots, producing an age range from early, through mid, to late primary classes. The first group filmed in each class was then selected for quantitative analysis at pre-test stage, and the same groups were tracked and analysed at mid- and post-test points. Each of the four groups' transcribed dialogue was therefore analysed three times, for a total sample of twelve film clips. As film clips varied in length, even units of measurement for counted behaviours were calculated by dividing the frequency count by the duration of the film clip.

Data analysis. MALS scores and peer assessment ratings were analysed statistically through ANOVA repeated measures, to compare experimental and control groups. Experimental pupils' retrospective 'before' and 'after' ratings of their group work were compared through paired t-tests. Comparison across ages and classes was made using ANOVA repeated measures.

The edited film clips provided the intervention material and also served as data for analysis. A random sample of film clips was analysed quantitatively. Verbal and non-verbal behaviours were counted at pre-, mid- and post-test phases from classes at

P2/3, P4 and P6 stages. Paired t-tests were used to compare each of the nine behaviours. ANOVA repeated measures were used to examine the interaction between shifts in open and closed questions.

Results

Myself as a Learner Scale (MALS)

ANOVA repeated measures compared experimental and control MALS scores pre- to post-test, and also analysed MALS score differences by gender, school and class. The mean MALS scores are presented in Table 2:

INSERT TABLE 2 ABOUT HERE

Most groups had high average self-esteem at pre-test, with four exceptions to this – School 1 and Primary 5 were mid-range, and Primary 2/3 and Primary 3/4 were above average to start. Most strikingly, the youngest Primary 2/3 group started above average, and increased further post-test, which is a remarkable finding. The P3/4 class decreased post-test.

Two-way repeated measures ANOVA showed a significant difference between experimental and control pre-post MALS scores, $F(1,282) = 5.445$, $p=0.02$. **Control group mean MALS scores decreased by significantly more than the experimental group.**

Formatted: Highlight

So the main finding was that the VIG intervention favoured the experimental group.

Two-way repeated measures ANOVA showed no significant difference in relation to gender. Two-way repeated measures ANOVA showed highly significant differences ~~between schools, $F(3,280) = 17.926$, $p<0.001$, and also~~ between classes, $F(6,277) = 12.211$, $p<0.001$. ~~A s~~Supplementary posthoc tests confirmed this. Effect sizes ~~was~~ere also large for ~~schools (partial eta squared=0.161) and~~ classes (partial eta squared=0.209), which indicated that a high proportion of the total variability could be attributed to the variation between ~~schools and~~ classes.

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 16

The class/age differences were particularly interesting. The important finding was that the mean MALS scores increased for younger P2/3 and P3 classes, and decreased for older classes. So the intervention had greatest impact on younger pupils' self-esteem in relation to learning. Additional repeated measures ANCOVA confirmed a significant effect of MALS pre-test on post-test scores, as would have been expected ($F(1,284)=165.273$, $p<0.001$).

Peer Assessment

Table 3 reveals highly significant increases for peer assessments of group working behaviours pre-to-post.

INSERT TABLE 3 ABOUT HERE

Positive statistically significant increases were found in peer ratings of both experimental and control pupils' behaviours as well as across the whole sample, over the course of the intervention, as evidenced by t-tests. Two-way repeated measures ANOVA showed a significant difference in favour of the controls, $F(1,246) = 15,122$, $p<0.001$. So all ratings increased, but the controls significantly more so. As expected, repeated measures ANCOVA confirmed a significant effect of pre-test on post-test peer ratings ($F(1,248)=151.060$, $p<0.001$).

Experimental Pupil Questionnaire

'You can hear with your eyes as well as with your ears' (7 year old boy)

This questionnaire explored experimental pupils' retrospective ratings of how well their group had worked together at the start and end of year, presented in Table 4:

INSERT TABLE 4 ABOUT HERE

The overall mean rating increased from 3.42 to 4.28, with a paired t-test showing this to be a statistically significant increase, $t(207) = -10.469$, $p<0.001$.

Experimental pPupils' views were that the video intervention had positively impacted

on their group work. Ratings increased for all age groups. Two-way repeated measures ANOVA showed a significant difference between experimental classes, $F(1,201) = 3.793$, $p=0.003$. The direction was in favour of the youngest class. Supplementary posthoc tests also confirmed significant differences between experimental classes. The youngest P2/3 class showed the biggest increase, the next youngest P3 showed the smallest increase, and all other classes increased by about one point on the 5-point scale. This generally accords with the other result, that the intervention had the greatest impact on youngest pupils. Most pupils responded positively to the final question - do you think the video work has helped your group work? The great majority, 156 pupils indicated yes, 36 no, and 17 gave no response.

Themes were identified from pupils' responses to questions: what did you like best/not like about the video work?

- Most pupils across all ages felt that the video had helped their group work, that this had improved over the year.
- One thing pupils liked best ('seeing myself') was also one of the things not liked. Pupils preferred seeing others, rather than seeing themselves.
- The language used by pupils about what they didn't like (embarrassed, scared, nervous, distracted) indicated self-consciousness about being filmed and seeing themselves on film. This was a common theme, with younger children appearing just as self-conscious as older children.
- Pupils recognised the learning aspect of seeing themselves and others working in groups, the benefit of rising to the challenge, to improve their skills.

Teachers' Views

Views from school staff on the process revealed:

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 18

- Children were working well during group problem solving tasks, becoming more skilled in taking on various roles and responding to each other's ideas.
- Teachers really enjoyed the feedback review sessions which were enlightening for themselves, and benefited their pupils in seeing what they were doing well.
- Senior management in two schools requested permission to use film clips to model good communication with other pupils, to evidence and enhance other related project work in school.

Analysis of Film Clips

Verbal and non-verbal behaviours were counted at pre-, mid- and post-test stages for four class groups. Paired t-tests for each of the nine behaviours counted revealed no statistically significant shifts pre-post. Non-verbal behaviours, such as eye contact and turn taking, did not significantly change as a result of the intervention. Two-way repeated measures ANOVA examined the interaction effect between open-closed questions x mid-post-test, showing a significant interaction effect for this combination, $F(1,3) = 16.784, p=0.026$. So there was a significant increase in open questions relative to decreased closed questions mid- to post-test. Closed questions reduced in 3 out of 4 groups, and open questions increased in 3 out of 4 groups, mid to post. The main finding of the behavioural analysis was that the direction was in favour of open questions replacing closed questions from mid- to post-test. However Cronbach's Alpha was only 0.23, which means that a caution should be placed upon the reliability of this finding. No other significant interaction effects were found.

A more detailed analysis of the descriptive data, group by group, in relation to shifts in numbers of open and closed questions, revealed some interesting findings, as can be seen in table 5:

INSERT TABLE 5 ABOUT HERE

Group 1 gave the ideal result, a shift downwards for closed questions and a shift upwards for open questions. Group 3 showed a shift upwards for open questions. Group 4 showed a shift downwards for closed questions but is not very comprehensible for open questions, unless open questions are replacing closed questions. Group 2 was the most unusual finding – closed questions showed a slight increase in the middle and open questions started high then declined to nothing then bounced back a bit. This can probably be explained by the changing nature of the tasks this group was engaged in.

Overall the data showed general shifts pre-to-post, upwards for open questions and downwards for closed questions, across all groups apart from group 2, although this was not a statistically significant finding. The mid-to-post shift was a statistically significant finding.

Discussion

Summary of Main Findings

The main findings of this study were:

1. The VIG intervention significantly favoured the experimental group, in relation to self-esteem. The whole sample dip in self-esteem could be explained by increased self-awareness as a result of the intervention.
2. The greatest impact of VIG was on increasing the self-esteem of younger children. Experimental pupils' retrospective ratings of group work significantly increased, again the youngest pupils showed the greatest improvement.
3. Analysis of a film sample of pupil group work found a significant shift, a trend toward increased open questions replacing closed questions mid- to post-test.
4. The post-test experimental pupil questionnaire showed overwhelmingly positive pupil ratings, on perceived improvements to their group work, and on the impact of the video work.

5. A significant increase was found in peer assessment of good communicative behaviours, across the whole sample, irrespective of the VIG intervention. This may have reflected pupils' enhanced social awareness as a result of the repeated group work opportunities given to both experimentals and controls.

This study showed relative benefits, enhancing the self-esteem of learners who experienced VIG sessions. Younger children aged 6-7 years benefited most. These children demonstrated a wide range of sophisticated communicative behaviours: asking questions; making comments; making suggestions; giving opinions; exchanging, exploring and building upon ideas; acknowledging and reaching agreement. Younger children were found to be no less self-conscious than older children about seeing themselves on film. They were already developing objective views of themselves and their classmates.

An incidental interesting 'discovery' arose in this project. Groups of children were caught on film unconsciously moving their bodies in synchrony during group activities and discussion. This 'jellyfish' effect occurred when a group of children's heads moved in and out together at the same time, giving a sense of a whole organism's parts pulsing at one with each other, working together in harmony. This phenomenon is likely to be noticed by any alert teacher in any good group learning situation. This was felt to be an indication of how well the group members were attuned to each other, and was simply fed back to groups as evidence of them working well together.

Limitations of the Study

It was not easy to control for all variables impacting in this study. Significant differences were found between schools and between classes in pre-post MALS scores, which could reflect a range of contextual variables such as SES, school ethos, teaching styles and environments. No firm conclusions can be drawn about what specifically lead

to these improvements. Peer assessment results showed significant experimental/control pre-post differences in favour of the control group. This may have been due to increased peer criticality in the experimental group as a result of the intervention, or been due to flaws in the tool and its administration.

Conclusion and Implications for Practice

The main finding of this study was the relative enhancement of pupils' self-esteem through VIG group work, particularly for younger children. This is an important finding as it points to when VIG group work might be most effectively delivered. The younger pupils were already developing objective views of themselves and their classmates. The implications for this are immense, for the benefits of teaching team working skills in schools from a young age, using VIG, and giving children an early grounding in collaboration skills.

The use of video as a self-reflection tool for pupils can help identify and share examples of good communicative behaviours in team work situations. Teachers and other educational professionals would likely benefit from training in how best to use video as a tool to enhance group learning in the classroom and other situations.

Socratic enquiry, the stimulation of discussion and debate, is not a new thing in classrooms – it continues to have its place. VIG can contribute to this through enhancing the participation of all pupils as well as helping them develop skills for life.

References

Baines, E., Blatchford, P., Kutnick, P., Chowne, A., Ota, C. & Berdondini, L. (2008).

Promoting effective group work in the primary classroom: A handbook for teachers and practitioners. London and NY: Routledge.

Baines, E., Blatchford, P. & Kutnick, P. (2008). Pupil grouping for learning:

Developing a social pedagogy of the classroom. In *The teacher's role in*

- implementing cooperative learning in the classroom*. Computer-Supported Collaborative Learning Series, 8, 56-72.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barrett, W. & Randall, L. (2004). Investigating the circles of friends approach: Adaptations and implications for practice. *Educational Psychology in Practice*, 20(4), 353-367.
- Burden, R. (1998). Assessing children's perceptions of themselves as learners and problem solvers: The construction of the Myself-as-a-learner scale (MALS). *School Psychology International*, 19(4), 291-305.
- Burden, R. (2000). *Myself as a Learner Scale*. Windsor, England: NFER-Nelson.
- Dewey, J. & Bento, J. (2009). Activating children's thinking skills (ACTS): The effects of an infusion approach to teaching thinking in primary schools. *British Journal of Educational Psychology*, 79, 329-5.
- Dowrick, P.W. (1999). A review of self modeling and related interventions. *Applied and Preventative Psychology*, 8, 23-39.
- Forsyth, P., Kennedy, H. & Simpson, R. (1996). *Video interaction guidance in schools: We've looked at it from both sides now*. Dundee Educational Psychology Service.
- Forsythe, K. (2010). *Promoting strengths and empowering classroom assistants: A video based intervention aimed at enhancing classroom assistants' communication skills and confidence in supporting and managing individual pupils with special educational needs*. Thesis Queen's University, Belfast, Doctorate in Child and Adolescent Psychology.
- Frederickson, N. & Cameron, R.J. (Eds.) (1999). *Psychology in Education Portfolio*. NFER-NELSON.

- Fukkink, R.G. & Tavecchio, L.W.C. (2010). Effects of video interaction guidance on early childhood teachers. *Teaching and Teacher Education*, 26, 1652-1659.
- Gavine, D. & Simpson, R. (2006). *Enhancing practice in formative assessment by means of video feedback*. VIG IRC, University of Dundee.
- Gavine, D. & Forsyth, P. (2011). Use of video interaction guidance in schools. In Kennedy, H., Landor, M. & Todd, L. (2011) *Video interaction guidance: A relationship-based intervention to promote attunement, empathy and wellbeing*. London: Jessica Kingsley Publishers.
- Gillies, R.M., Ashman, A. and Terwel, J. (Eds.) (2008). *The Teacher's Role in Implementing Cooperative Learning in the Classroom*. Springer.
- Hayes, B., Richardson, S., Hindle, S. & Grayson, K. (2011). Developing teaching assistants' skills in positive behaviour management: An application of video interaction guidance in a secondary school. *Educational Psychology in Practice*, 27(3), 255-269.
- Hogan, D.M. & Tudge, J.R.H. (1999). Implications of Vygotsky's theory for peer learning. In O'Donnell, A.M. & King, A. (Eds.) (1999). *Cognitive perspectives on peer learning*. London: Lawrence Erlbaum Associates.
- Kaye, G., Forsyth, P. & Simpson, R. (2000). Effective interaction in the classroom: Towards a new viewpoint. *Educational and Child Psychology*, 17(4), 69-90.
- Kennedy, H. & Sked, H. (2008). Video interaction guidance: a bridge to better interactions for individuals with communication impairments. In Zeedyk, M. S. *Promoting social interaction for individuals with communicative impairments: Making contact*. London: Jessica Kingsley Publishers.

- Kennedy, H., Landor, M. & Todd, L. (2011). *Video interaction guidance: A relationship-based intervention to promote attunement, empathy and wellbeing*. London: Jessica Kingsley Publishers.
- Kutnick, P., Blatchford, P. & Baines, E. (2010). Pupil groupings in primary school classrooms: Sites for learning and social pedagogy? *British Educational Research Journal*, 28(2), 187-206.
- Kutnick, P., Ota, C. & Berdondini, L. (2008). Improving the effects of group working in classrooms with young school-aged children: Facilitating attainment, interaction and classroom activity. *Learning and Instruction*, 18(1), 83-95.
- Landor, M., Lauchlan, F., Carrigan, D. & Kennedy, H. (2007). Feeding back the results of dynamic assessment to the child. *Advances in Speech-Language Pathology*, 9(4), 346-353.
- Lennon, L. & Philp, S. (2003). *Adapting video interaction guidance as a tool for training auxiliary staff within schools: Evaluation of a pilot project*. Dundee University Manuscript – Unpublished.
- Lhyle, K.G. & Kulhavy, R.W. (1987) Feedback processing and error correction. *Journal of Educational Psychology*, 79, 320-322.
- McGuinness, C. (2005). Teaching thinking: Theory and practice. *British Journal of Educational Psychology*, Monograph Series II, 3, 107-126.
- McGuinness, C. (2006). *Building thinking skills in thinking classroom*. ACTS (activating children's thinking skills) in Northern Ireland. teaching and learning research briefing, no. 18 for teaching and learning research programme.
- Mercer, N. (2005). Sociocultural discourse analysis: Analysing classroom talk as a social mode of thinking. *Journal of Applied Linguistics*, 1(2), 137-168.

- Mercer, N. (2008). The seeds of time: Why classroom dialogue needs a temporal analysis. *Journal of the Learning Sciences*, 17(1), 33-59.
- Mercer, N. (2010). The analysis of classroom talk: Methods and methodologies. *British Journal of Educational Psychology*, 80, 1-14.
- Mohammed, A. & Musset, M. (2007). *Circles of friends / video interaction guidance: A collaborative project with a primary 4 class*. Aberdeen City Council project booklet.
- National Institute for Health and Care Excellence (2012). *Guidelines - social and emotional wellbeing: early years*.
- O'Donnell, A.M. & King, A. (Eds.) (1999). *Cognitive perspectives on peer learning*. London: Lawrence Erlbaum Associates.
- Piaget, J. (1955). *The construction of reality in the child*. London: Routledge and Kegan Paul.
- Samuels, S.J. & Wu, Y-C. (2003). *The effect of immediate feedback on reading achievement*. Manuscript submitted for publication, University of Minnesota.
- Scottish Government (2012). *Scottish index of multiple deprivation*. Local authority summary on Scottish Government website.
- Simpson, R., Forsyth, P. & Kennedy, H. (1995). *An evaluation of video interaction analysis in family and teaching situations*. Professional Development Initiatives SED Regional Psychological Services.
- Simpson, R. (2001). Video interaction guidance in parenting and family focussed work. *Association of Child Psychology and Psychiatry*, Occasional papers, no. 18.
- Topping, K.J., Samuels, J. & Paul, T. (2008). Independent reading: The relationship of challenge, non-fiction and gender to achievement. *British Educational Research Journal*, 34(4), 505-524.

- Trevarthen, C. (1979). Communication and Cooperation in Early Infancy: A Description of Primary Intersubjectivity. In Bullowa, M. (Ed.), *Before speech: The beginning of interpersonal communication*. Cambridge: Cambridge University Press.
- Trevarthen, C., & Hubley, P. (1978). Secondary intersubjectivity: confidence, confiding, and acts of meaning in the first year. In Lock, U. (Ed.), *Action, gesture and symbol: The emergence of language*. London: Academic Press.
- Vygotsky, L. (1978). Interaction between learning and development. In Cole, M. *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press, 79-91.
- Webb, N.M. (1989). Peer Interaction and Learning in Small Groups. *International Journal of Educational Research*, 13(1), 21-39.
- Webb, N.M. (2009). The Teacher's Role in Promoting Collaborative Dialogue in the Classroom. *British Journal of Educational Psychology*, 79, 1-28.

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 27

Table 1: Details of lessons filmed

School Class		First lesson <i>September/October 2011</i>	Second lesson <i>January/February 2012</i>	Third lesson <i>May/June 2012</i>
1	Primary3	Design pirate ship posters.	Maths money games.	Gumboot dancing routines.
	P6	Create story maps.	Road safety banner.	Presentations on body parts.
2	P2/3	Egg drop challenge.	Problem solving challenges X 6 activities carousel.	Challenge to make a paper structure to support a brick.
	P5	Design a car of the future.	Map work.	Discussion and question generation from art masters paintings.
3	P3/4	Friendship poster challenge.	Subtraction poster.	Presentation on how iPads can help improve learning.
	P6	Maths topic poster.	Story planning, using senses.	Design a board game about 2d + 3d shapes.
4	P3	Make a toy Humpty Dumpty mobile.	Egyptians poster.	Countries research project.
	P4	Make an activity and puzzles book.	Draw treasure island map.	Making origami pigs.
	P5	Historical challenge poster.	Design and make a protective jungle hat.	Design and make an Olympic stadium.

Table 2: Mean MALS scores pre- to post-test

Sample/ group	N	Pre-test mean score	Pre-test SD	Post-test mean score	Post-test SD
Whole sample	284	75.87	12.24	75.21	13.20
Experimental	164	77.12	11.56	76.65	12.60
Control	120	74.17	12.96	73.25	13.80
Boys	143	75.67	12.73	74.64	13.94
Girls	141	76.07	11.76	75.79	12.43
School 1	79	70.29	12.18	70.30	12.10
School 2	64	73.30	12.60	70.63	14.39
School 3	45	79.82	10.42	81.00	10.95
School 4	96	80.32	10.54	79.59	11.69
Primary 2/3	22	82.05	11.20	85.95	10.89
Primary 3	44	74.20	11.43	78.07	11.39
Primary 3/4	22	82.27	10.35	77.86	10.94
Primary 4	48	79.87	10.22	79.40	11.62
Primary 5	73	68.67	12.67	66.25	12.39
Primary 5/6	24	77.12	11.29	76.12	12.42
Primary 6	51	77.82	10.81	75.43	12.66

*MALS average score range = 62-80

IMPACT OF VIG IN COLLABORATIVE GROUP WORK 29

Table 3: Mean peer assessments of group working behaviours (ratings 1 to 5)

Group	N	Pre- test mean rating	Pre- test SD	Post- test mean rating	Post- test SD	t value	p value	Statistical Significance
Experimental	180	3.54	0.66	3.65	0.70	-2.63	p=0.009	Yes
Control	68	3.81	0.82	4.09	0.78	-3.04	p=0.003	Yes
Total	248	3.61	0.71	3.77	0.75	-3.93	p<0.001	Yes

Table 4: Experimental pupil mean ratings of how well their group worked together (ratings from 1 to 5)

Class group	N	Start of year mean rating	Start of year SD	End of year mean rating	End of year SD	Statistical Significance t-test p value
Primary 2/3	20	2.95	1.10	4.15	1.27	
Primary 3	43	3.91	0.78	4.33	0.94	
Primary 3/4	21	3.29	1.10	4.19	1.03	
Primary 4	27	3.56	0.97	4.41	0.64	
Primary 5	47	3.23	0.76	4.13	0.68	
Primary 6	49	3.33	0.69	4.41	0.61	
Total/Average	207	3.42	0.89	4.28	0.83	Yes p<0.001

* Note: In Scotland the primary age range spans 5-11 years, Primary 1 to Primary 7

Table 5: Changes in numbers of open and closed questions asked over time (per minute)

	Closed Question	Closed Question	Closed Question	Open Question	Open Question	Open Question
	<i>Pre-test</i>	<i>Mid-test</i>	<i>Post-test</i>	<i>Pre-test</i>	<i>Mid-test</i>	<i>Post-test</i>
Group 1 P6	0.70	0.83	0	0.70	1.38	3.85
Group 2 P2/3	0	0.51	0	3.64	0	1.33
Group 3 P4	0	0	0	0	2.33	3.90
Group 4 P6	3.39	1.32	0	0.85	1.32	1.09